THE position of curator in paleontology at Columbia University, made vacant by the resignation of Dr. Elvira Wood, has been filled by the appointment of Felix Hahn, Ph.D., of Munich, who began his work at the university in August. Dr. Wood has gone to the Museum of Comparative Zoology in Cambridge.

DR. J. D. FALCONER, late principal officer of the Mineral Survey of Northern Nigeria, has been appointed to the lectureship in geography at Glasgow University, vacated by Captain Lyons, F.R.S.

DISCUSSION AND CORRESPONDENCE

TEXT-BOOKS AND REVIEWING

AMONG the numerous text-books which appear every year, some are critically and carefully reviewed, but others are treated superficially, or scarcely noticed. Without having compiled any statistics, I have the impression that the condition of affairs is on the whole very unsatisfactory, especially with regard to books intended for the secondary schools. Having for many years been interested in high-school biology, I have had occasion to look at many text-books and read many reviews, and it seems to me doubtful whether at the present time the high schools are protected, as they ought to be, from bad work. It may be said that the teachers themselves should know enough to avoid the use of badly written books, or to correct the errors in those which are on the whole meritorious; but any one acquainted with actual conditions will know that this is much more difficult than it seems. The one necessary thing is that responsible writers shall deal adequately and frankly with the books in responsible journals, making it impossible for anything unworthy to escape the criticism it deserves. Text-books stand on a somewhat different footing from other works. An original monograph may be praised for its good qualities, and its faults (there are always some!) forgiven. It is judged by the actual advance in knowledge it represents. A text-book should be scrutinized so carefully that all errors are eliminated, save those due to the unwitting ignorance of present-day science. Criticisms which may seem ungracious in respect to original works, are justifiable and necessary when dealing with text-books. I will even suggest that SCIENCE might do worse than open a column headed "errors in text-books," to which teachers should send signed notes pointing out the mistakes they find from time to time. These corrections would be especially valuable when concerning texts in constant use and of known merit.

The immediate occasion for these remarks is a book by Dr. E. Davenport, of the University of Illinois, entitled "Domesticated Animals and Plants" (Ginn & Company, 1910). A copy of this work reached us at the University of Colorado early in the present year, and was examined with more than usual interest, on account of the need for something of the kind in our high schools. It was seen to be of convenient size, well printed, pleasantly written, and well illustrated. However, about the first thing to strike the eye on turning over the pages was a good picture of a passenger pigeon, with the extraordinary statement that it is the "wild parent of all the domesticated sorts that have been developed by selection." On the next two pages are figures of twenty kinds of domestic pigeons, with these legends: "Types of pigeons developed from the rock or passenger pigeon shown in Fig. 13"; "Additional types developed from the passenger pigeon, by selection and breeding." This astounding information is outdone, if that is possible, by some of the definitions at the end of the book, as "*zygote,* that portion of the gamete which determines a unit character"; "*gamete,* the fertilized ovum or ovule." Fairly dizzy, we turn over a few more pages and discover that (p. 163) "every individual transmits all the characters of his ancestry," a statement considered so important that it is italicized. The amount of error in the book is well brought out by Mr. Richard Lydekker, who reviews it in *Nature,* March 23, 1911, p. 107. Taking up the one section on cattle and sheep (eleven pages) he finds a whole series of blunders,

which he enumerates in some detail. In short, the book is so inaccurate that it is an outrage to put it in the hands of a single immature student. This book has been pushed by active and intelligent agents, and also widely advertised; it has doubtless been adopted in many schools. How have the scholars of America dealt with it? The first review I saw was in the *Nation,* of course anonymous. It was laudatory, and did not indicate that anything was wrong; though I remember a vague reference to some matters on which there might be differences of opinion. I wrote to the editor, pointing out the real character of the book, and received the reply that the reviewer quite agreed with me as to the work *as a text-book,* but reviewed it favorably because he thought it might be useful in other ways!

For some time no other review came to my notice, until I received the *American Breeders' Magazine,* Vol. 2, No. 1. Here, if anywhere, we might expect critical treatment. The review (p. 77) is wholly and extravagantly laudatory, without any hint of errors. It ends with the remark that "Dean Davenport's pioneering work is most valuable, both because of the excellence of his books and because they blaze the trail in this subject." The review is anonymous, and the editor, on being written to, does not defend it.

Finally, I find a review by Dr. Geo. H. Shull in *Botanical Gazette,* September, 1911. Dr. Shull, as might be expected, tears up and scatters to the four winds the treatment of Mendelism, but says that it lacks "the definiteness and accuracy which characterizes the rest of the book," and again "It seems unfortunate that a book otherwise so admirable should propagate such definitions as these."

I should have had something to say on this matter earlier, but for the fact that Ginn and Company's agent, visiting me here, gave me to understand that the edition would be withdrawn and a corrected one substituted. After a time, suspecting that this was not being done I wrote to the publishers direct and was told (August 21, 1911) that "no revision of it has been called for or made." A later letter (September 4) stated that it was Professor Davenport's intention to make some changes and corrections which my earlier letters to the publishers had suggested. There is no indication whatever of any intention to withdraw the edition now on sale.

Other instances could readily be cited to show that vigilance is the price of accurate text-books. I will mention only one that came before me quite recently. Two books arrived in the same package from the American Book Company. One is Hunter's "Essentials of Biology," the other Sharpe's "Laboratory Manual for the Solution of Problems in Biology." The authors both teach in the De Witt Clinton High School. Hunter (p. 44) refers to the composite "flower cluster, so often mistaken for a single flower"; Sharpe (explanation to figure 6) does so mistake it, the legend reading "Curve of variation in number of petals of ox-eye daisy. . . . Number of petals to a flower on line *ac.*"

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"AIR IN THE DEPTHS OF THE OCEAN"

TO THE EDITOR OF SCIENCE: In a recent number (August 25) an explanation is offered by Carl Hering as to the supply of dissolved oxygen, necessary for the respiration of fishes, even at great depths in the ocean. The suggestion is that the solubility of oxygen in water, being proportional to the pressure, is much greater at considerable depths than at the surface, and therefore the dissolved oxygen diffuses readily downwards.

There is surely a confusion of ideas here regarding pressure. The pressure to which the solubility of oxygen is proportional is the (partial) gas pressure of oxygen; the great pressure in the ocean depths is hydrostatic, which has but a very slight effect on the solubility of a gas.

The solubility of oxygen, therefore, does not appreciably increase towards the bottom of the sea, but the ordinary process of diffusion from the saturated surface layers may well provide adequate oxygen even at the greatest depths, in view of its uninterrupted action and the